

## ABSTRACT

A plant is made up of a plurality of automated stations (11) for the performance of an assembly process for body parts or the like. In the stations there are measurement sensors in established measurement points for measurement of geometrical magnitudes of the parts in assembly . The measurement data taken by the sensors are received by a processing unit (16) which detects any deformations of the parts in the various stations and traces back from the deformations detected to the causes thereof and emits a diagnosis signal of the presumed cause. For identification of errors a method in accordance with the present invention comprises an analysis step in which are ascertained measurement points and correlations are ascertained between measurements detectable in the measurement points and possible causes which might generate such movements. In a subsequent inline diagnosis step the processing unit supervises any movements in the previously ascertained measurement points and traces back to the possible causes of the movements and signals such possible causes to allow their elimination if desired or necessary. To ascertain the causes a mathematical model to which are applied possible stresses is used and the deformations generated by it are identified to then compare them with the deformations really measured.